UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,431	10/30/2003	Jari Makinen	KOLS.062PA	3286

7590   04/28/2008

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EXAMINER
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ART UNIT	PAPER NUMBER
2626	

MAIL DATE	DELIVERY MODE
04/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on _13 November 2007_.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under _Ex parte Quayle_, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-18_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) _1-18_ is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☒ The drawing(s) filed on _30 October 2003_ is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☒ All   b) ☐ Some * c) ☐ None of:

        1. ☒ Certified copies of the priority documents have been received.

        2. ☐ Certified copies of the priority documents have been received in Application No. _____.

        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office Action is in response to the applicants amendment, filed 11/13/2007,

in which the applicant presents new **claims 16-18**, and submits arguments for

patentability over the prior art.

Response to Amendment

2.   The applicant's amendments to the specification with respect to paragraph have

been considered and are accepted.

3.   The applicant's amendments to the claims with respect to the spacing of the lines

have been considered and are accepted. It is noted by the examiner that formal

acceptance of the conditions of the claims is not an indication of allowability of the

claims over the prior art. Appropriate rejections are included in this Office Action in the

relevant sections below.

Response to Arguments

4.   Applicant's arguments, see Remarks/Arguments, filed 11/13/2007, with respect

to the line spacing of the specification and the labeling of reference numeral 110 in Fig.

1 have been fully considered and are persuasive. The objections to the specification in

relation to these matters have been withdrawn.

5.   Applicant's arguments regarding the objection to the specification directed towards the language of paragraph 0011 have been fully considered but they are not persuasive.

        Specifically, the language of paragraph 0011 is written in such a way that it is awkward to the reader and invites misinterpretation, as demonstrated by the prior misinterpretation by the examiner. Because the specification is required to teach the implementation of the claims, it is necessary that the specification be written as clearly as possible. Therefore, the arguments are non-persuasive and the objection remains. It has been repeated below in the relevant sections of this Office Action for convenience.

6.   Similarly, the applicant's arguments regarding the objection to the specification directed towards the language of paragraph 0036 have been fully considered but they are not persuasive.

        Specifically, the language of paragraph 0036 is written in such a way that it is awkward to the reader and invites misinterpretation, as demonstrated by the prior misinterpretation by the examiner. Because the specification is required to teach the implementation of the claims, it is necessary that the specification be written as clearly as possible. Therefore, the arguments are non-persuasive and the objection remains. It has been repeated below in the relevant sections of this Office Action for convenience.

7.   Applicant's arguments filed 11/13/2007 regarding the limitations of **claim 1** in

view of the cited reference Demetrescu (EP 1,126,651 A1), cited in the previous Office

Action, have been fully considered but they are not persuasive.

        Specifically, the applicant claims that Demetrescu has not been shown to teach

receiving information on an active codec mode set, as claimed in each of the independent claims

(Remarks/Arguments: p. 10, paragraph 4), however, the term `active codec mode`

`set` is analogous to the modes of operation as disclosed by Demetrescu in the cited

portions (Col. 2, paragraph 0015). Demetrescu further discloses that the modes of

operation are directed to the behavior of an active codec mode throughout the

disclosure of the invention, including the transmission of controller signals for the modes

of operation (Col. 3, paragraphs 0019-0020; Page 7, paragraph 0056).

        The applicant further argues that Demetrescu fails to teach encoding speech signals

with activated modes such that a speech codec mode of the substantially lowest bit rate is

adapted to speech frames so that the level of residual error in coding will be minimized in view

of the channel conditions (Remarks/Arguments: p. 11, paragraph 1). It is noted by the

examiner that the applicant further submits that Demetrescu specifically teaches that a

high rate is intentionally set in good channel conditions.

        It is noted by the examiner that the limitation of **claim 1** in question specifically

includes the limitation of `...so that the level of residual error in`

`coding will be minimized in view of the channel conditions.` It is

noted by the examiner that Demetrescu explicitly discloses that "the rate of coding is varied in accordance with the conditions in the channel" and that "if signaling conditions are poor, a slow rate is used. If conditions are good, a fast rate is used (Col. 1, paragraph 0005)." This disclosure is analogous to minimizing residual error in transmission by controlling bitrate, as is provided in the incident limitation of **claim 1**.

It is further noted by the examiner that the broadest reasonable interpretation of "lowest bit rate…so that the level of residual error in coding will be minimized in view of the channel conditions" according to one of ordinary skill in the art would comprise a system where if channel conditions are good and the highest bit rate possible provides the lowest residual error, the highest bit rate is used, such as in the disclosure of Demetrescu. The examiner submits that the inclusion of the limitation of `"so that the level of residual error in coding will be minimized"` is presented such that there is no indication within the language of the claims that presents higher priority to either minimizing residual error or minimizing bit rate, and therefore one of ordinary skill in the art could view either limitation as the predominant determining factor for transmission bit-rate. Therefore, the disclosure of Demetrescu does indeed teach the limitations of **claim 1**, and for at least this reason the arguments of patentability over Demetrescu or non-persuasive. The previous rejections of the claims are included below in the relevant sections of this Office Action.

Regarding the applicant's argument that none of the prior art references teach `adapting the target level of residual error in coding in the`

`speech codec mode selection`, the applicant specifically argues that Gao (US

6,574,593 B1), cited in the previous Office Action, does not overcome this limitation.

In the previous Office Action, the examiner cited Gao in disclosing a

determination of a Mode Signal for the control of operations in a speech compression

system (Col. 7, lines 19-28). Said Mode Signal is the primary factor of residual error in

the disclosure of Gao. Gao further discloses that said determination is based upon a

plurality of factors, including desired quality of post-processed synthesized speech and

available bandwidth (Col. 7, lines 27). Both of these factors are directly related to

average bit rate and imply such an association to one of ordinary skill in the art. It is

further noted that the standard for rejection using a combination of references under 35

USC §103(a) does not require explicit anticipation and instead requires that the

limitations of the claim would be rendered obvious to one of ordinary skill in the art at

the time the invention was made. Because one of ordinary skill in the art would be

aware of the connection between average bit rate and both synthesized speech quality

and bandwidth constraints, the disclosure of Gao renders obvious the usage of average

bit rate as an indicator of speech quality in view of a known bandwidth. For at least this

reason, the disclosure of Gao renders obvious the adaptation of target residual error

based upon average bit rate.

It is further noted by the examiner that the applicant does not provide any

reasoning to explain why the initial citation of Gao in the previous Office Action is

insufficient to overcome the limitations of **claim 3**.

Regarding the provisional rejections of **claims 1-5** and **8** in accordance with the

doctrine of double patenting, it is noted that previously co-pending application

10/732,369 has now gone abandoned, and therefore the provisional double patenting

rejections with regard to this application are withdrawn.

The remaining rejections of the previous Office Action, based on double

patenting in view of co-pending applications 10/676,269 (still pending) and 10/804,099

(in condition for allowance, but not yet issue) will be maintained until such time that a

terminal disclaimer is filed or the conflict between claims of each of the applications is

resolved.

Specification

8.   The disclosure is objected to because of the following informalities:

•   Page 3, paragraph 0011, lines 2-3 (Under "BRIEF SUMMARY OF THE

INVENTION") reads, "...are adaptive such that responsive to changes..." It is the

examiner's suggestion that this instead read "...are adaptive such that <u>in</u>

<u>response</u> [responsive] to changes..."

•   Page 11, paragraph 0036, lines 3-4 (under "DETAILED DESCRIPTION OF THE

INVENTION") reads, "...without that the speech quality deteriorates." It is the

examiner's suggestion that this instead read, "...<u>so that</u> [without that] the speech

quality <u>does not</u> deteriorate[s]." This is the interpretation used for purposes of

examination.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9.   **Claims 1-2**, **8**, **15** and **17-18** are rejected under 35 U.S.C. 102(b) as being

anticipated by Demetrescu.

Regarding **claim 1**, Demetrescu teaches a method of link adaptation using a

plurality of speech codec modes for transmission in a telecommunications network

including:

•   receiving information on an active codec mode supported by the

telecommunications network (Paragraph 0015);

•   activating the supported codec mode that corresponds to the active

moved set of the telecommunications network (Paragraphs 0028, 0037-0038); and

•   encoding signals to be applied to the codec with the activated speech

codec modes such that there is a minimization of bitrate and minimization of error in

coding at the same time (Paragraphs 0005, 0032).

Regarding **claim 2**, Demetrescu further teaches:

- the method responds to changes in conditions of the telecommunications network (Paragraphs 0037-0038);

- the method responds to changes in the active codec mode set (Paragraph 0056);

- the method adapts the parameters to be used in the speech codec mode selection to correspond to new channel conditions of the telecommunications network or to a new active codec mode set (Paragraphs 0039, 0041).

Regarding **claim 8**, this claim has similar limitations to **claim 1**, and is rejected for the same reasons.

Regarding **claim 15**, this claim has similar limitations to **claim 1**, and is rejected for the same reasons.

Regarding **claims 17-18**, each of these claims is very similar to **claim 1**, and is rejected for the same reasons.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

10.   **Claims 3**, **9-10** and **16** rejected under 35 U.S.C. 103(a) as being unpatentable over Demetrescu in view of US Patent 6,574,593 B1, hereinafter referred to as Gao.

Regarding **claim 3**, Demetrescu teaches all limitations of **claim 1** as applied above, but does not teach the adapting of the target level of residual error in speech codec mode selection and bit rate to an average bit rate in the telecommunications network.

Gao teaches a speech coder capable of selectively activating codec modes to maximize quality while maintaining a desired average bit rate (Col. 5, lines 19-22; col. 7, lines 19-28).

Gao additionally provides motivation in the need for this method to maximize available bandwidth for optimizing the perceptual quality of synthesized speech (Col. 4, line 66 – col. 5, line 6).

Therefore, the examiner contends that it would have been obvious for one of ordinary skill in the art at the time the invention was made to modify Demetrescu using the teachings of Gao in order to optimize perceptual quality of synthesized speech on a telecommunications network while still maintaining average bit rate of the network to maximize use of available bandwidth.

Regarding **claim 9**, Demetrescu teaches all limitations of **claim 8** as applied

above, but this claim has similar further limitations to **claim 3** and is rejected for the

same reasons.

Regarding **claim 10**, Demetrescu further teaches:

- a means for determining a speech codec mode for a speech frame by

determining a codec mode of the lowest bit rate and selecting which mode minimizes

the residual error in coding (Paragraph 0005); and

- a means for adapting the parameters to be used in the speech codec

mode selection to correspond to new channel conditions of the telecommunications

network or to a new active codec mode set (Paragraph 0039, 0041).

Regarding **claim 16**, Demetrescu teaches all limitations of **claim 15** as applied

above, and additionally teaches encoding signals to be applied to the codec with the

activated speech codec modes such that there is a minimization of bitrate and

minimization of error in coding at the same time (Paragraphs 0005, 0032). The further

limitations of this claim are similar to the limitations of **claim 3** and it is rejected for the

same reasons.

11.   **Claims 4-6** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Demetrescu in view of US Patent 5,689,615, hereinafter referred to as Benyassine.

Regarding **claim 4**, Demetrescu teaches all limitations of **claim 1** as applied

above, but does not teach the additional limitations of **claim 4**.

Benyassine teaches:

- performing a sub-process on each frame of a speech signal to obtain

parameters (Col. 3, lines 39-48; col. 3, line 64 – col. 4, line 1); and

- adapting a speech codec mode on the basis of the parameters obtained

from said sub-process (Col. 3, line 64 – col. 4, line 1; claim 7).

Benyassine provides motivation by disclosing the use of this method to create a

more natural synthesized background noise without a significant reduction in efficiency

(Col. 2, lines 8-13).

Therefore, the examiner contends that it would have been obvious to one of

ordinary skill at the art at the time the invention was made to modify Demetrescu using

the teachings of Benyassine to create a more natural synthesized background noise in

speech transmission without a significant reduction in efficiency.

Regarding **claim 5**, Benyassine further teaches that the sub-process is VAD

parameterization (Col. 3, lines 30-48; claim 7).

Regarding **claim 6**, Benyassine further teaches:

- adapting a low bit rate speech codec mode for appropriate values of VAD

parameters (Col. 3, line 64 – col. 4, line 3, claim 7); and

- adapting a high bit rate speech codec mode for appropriate values of VAD

parameters (Col. 3, line 64 – col.4, line 3; claim 7).

12.   **Claim 7** is rejected under 35 U.S.C. 103(a) as being unpatentable over

Demetrescu in view of Benyassine as applied to **claim 4** above, and further in view of

the IEEE article "Phonetically-Based Vector Excitation Coding of Speech at 3.6 kbps" by

Wang and Allen, hereinafter referred to as Wang.

Regarding **claim 7**, this Demetrescu in view of Benyassine teaches all limitations

of **claim 4** as applied above, but does not teach any further limitations of this claim.

Wang teaches the parameterization of speech frames based upon features

including spectral content, the gains of different speech frame parameters, and zero

crossings of a speech frame (p. 50, col. 2, paragraph 2).

Wang further teaches the classification of a speech frame based upon said

parameterizations of that speech frame (p. 50, col. 1, paragraph 2; p. 50, col. 2,

paragraph 2).

Wang further provides motivation by disclosing the usefulness of this

parameterization in utilizing phonetic integrity as a measure of perceptual quality of

speech (p. 49, col. 1, paragraph 4; p. 50, col. 1, paragraph 4).

Therefore, the examiner contends that it would have been obvious for one of

ordinary skill in the art at the time the invention was made to modify Demetrescu in view

of Benyassine using the teachings of Wang in order to code speech using phonetic

integrity to ensure high perceptual quality while maintaining a natural synthesized

background noise without a significant reduction in efficiency.

Double Patenting

13.   **Claims 1** and **8** are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claims 10 and 15 of

copending Application No. 10/804,099. Although the conflicting claims are not identical,

they are not patentably distinct from each other because **claims 1 and 8** of the current

application cover the same material of claims 10 and 15 of Application No. 10/804,099

respectively.

This is a provisional obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

14.   **Claims 1**, **4-5**, and **8** provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claims 1, 3, 12, and 17

of copending Application No. 10/676,269. Although the conflicting claims are not

identical, they are not patentably distinct from each other because **claims 1, 4-5, and 8**

of the current application cover the same material as one or more of claims 1, 3, 12,

and/or 17 of Application No. 10/676,269.

This is a provisional obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

Conclusion

15.   Applicant's amendment necessitated the new ground(s) of rejection presented in

this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37

CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to DAVID KOVACEK whose telephone number is

(571)270-3135. The examiner can normally be reached on M-F 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DMK/, 04/24/2008
/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626